AMENDMENTS TO THE CLAIMS

Claim 48 is amended in this Response. No other claims are canceled or amended. This listing of claims will replace all prior listings, and versions, of claims in the application.

1.   (Original)   A system for aligning images, comprising:

a definition subsystem comprising a first image, a second image, a plurality of target reference points, and a geometrical object configured in said definition subsystem, said geometrical object comprising a plurality of template reference points and a location;

wherein said plurality of target reference points is associated with said first image;

wherein said plurality of template reference points is associated with said second image; and

wherein said definition subsystem is configured to identify said location;

a combination subsystem comprising an aligned image, wherein said combination subsystem is configured to generate said aligned image from said first image, said second image, at least one of said target reference points, and at least one of said template reference points.

2.   (Original)   The system of claim 1, wherein said definition subsystem generates said geometrical object by connecting at least a subset of said target reference points.

3.   (Original)   The system of claim 1, wherein said definition subsystem imposes a constraint upon at least one of said target reference points.

4.   (Original)   The system of claim 1, wherein said definition subsystem identifies a characteristic of said geometrical object.

5.   (Original)   The system of claim 4, wherein said characteristic is a centroid.

2

6.   (Original)   The system of claim 1, wherein said definition subsystem generates said geometrical object in said second image.

7.   (Original)   The system of claim 6, wherein said definition subsystem provides a plurality of controls for positioning said geometrical object within said second image.

8.   (Original)   The system of claim 7, wherein said plurality of controls includes at least one control for shifting said geometrical object along a dimensional axis, rotating said geometrical object, and changing a magnification of said geometrical object.

9.   (Original)   The system of claim 7, wherein said plurality of controls includes a coarse position control and a fine position control.

10.   (Original)   The system of claim 7, wherein said definition subsystem adjusts said geometrical object in relation to said second image.

11.   (Original)   The system of claim 1, wherein said definition subsystem provides a thumbnail image of said geometrical object.

12.   (Original)   The system of claim 1, wherein said definition subsystem identifies a plurality of positions of said geometrical object in relation to said second image, said plurality of positions including a gross position and a fine position.

13.   (Original)   The system of claim 12, wherein said plurality of positions is identified in a substantially similar manner.

14.   (Original)   The system of claim 1, wherein said definition subsystem provides an accuracy metric related to at least one of said template reference points.

15.   (Original)   The system of claim 1, further comprising an interface subsystem, wherein said interface subsystem indicates a relative position of said geometrical object within said second image.

3

16.   (Original)   The system of claim 1, wherein said combination subsystem accesses said target reference points and said template reference points from said definition subsystem.

17.   (Original)   The system of claim 1, wherein said combination subsystem generates an alignment calculation.

18.   (Original)   The system of claim 1, wherein said aligned image is generated from a plurality of images.

19.   (Original)   The system of claim 1, further comprising a detection subsystem configured to detect distortions relating to said aligned image.

20.   (Original)   The system of claim 1, wherein said target reference points are selected through an interface subsystem.

21.   (Original)   An apparatus for aligning images, comprising:
        a computer program tangibly embodied on a computer-readable medium, said computer program including:
        a plurality of target reference points associated with a first image;
        a geometrical shape generated by connecting at least a subset of said target reference points;
        a second image configured to include said geometrical shape, wherein said computer program provides for identifying a plurality of template reference points by positioning said geometrical shape in relation to said second image;
        a third image created from said first image, said second image, and a relationship between said target reference points and said template reference points; and
        an interface configured to receive input, wherein said input includes an instruction for defining said plurality of target reference points and a command for positioning said geometrical shape in relation to said second image.

4

22. (Original) The apparatus of claim 21, wherein said computer program imposes a constraint upon said target reference points.

23. (Original) The apparatus of claim 21, wherein said computer program identifies a feature of said geometrical shape.

24. (Original) The apparatus of claim 23, wherein said feature is a centroid.

25. (Original) The apparatus of claim 21, wherein positioning said geometrical shape includes at least one of shifting said geometrical shape along a dimensional axis, rotating said geometrical shape, and changing a magnification of said geometrical shape.

26. (Original) The apparatus of claim 21, wherein positioning said geometrical shape includes a coarse adjustment and a fine adjustment of said geometrical shape.

27. (Original) The apparatus of claim 21, wherein said computer program provides a thumbnail image of an area adjacent to a vertex of said geometrical shape.

28. (Original) The apparatus of claim 21, wherein said computer program identifies a gross position and a fine position of said geometrical shape in relation to said second image, and wherein said gross position and said fine position are identified in a substantially simultaneous manner.

29. (Original) The apparatus of claim 21, wherein said computer program provides an accuracy metric related to at least one of said template reference points.

30. (Original) The apparatus of claim 21, wherein said computer program requires more than four template reference points.

31. (Original) The apparatus of claim 21, wherein said geometrical shape is not a polygon.

5

32. (Original) The apparatus of claim 21, wherein said computer program generates an alignment calculation.

33. (Original) The apparatus of claim 21, wherein said computer program is configured to detect distortions of said third image.

34. (Original) The apparatus of claim 21, said computer program including a plurality of controls, said plurality of controls including a shift control, a rotation control, and a magnification control.

35. (Original) The apparatus of claim 34, wherein each control in said plurality of controls functions in a plurality of modes, said plurality of modes including a coarse mode and a fine mode.

36. (Original) A method for aligning images, comprising:

receiving an input for defining target reference points associated with a first image;

generating a geometrical object by connecting at least four said target reference points;

identifying template reference points based on a placement of said geometrical object in relation to said second image; and

producing an aligned image from said first image, said second image, and a relationship between at least one of said target reference points in said first image and at least one of said template reference points in said second image.

37. (Original) The method of claim 36, further comprising imposing a constraint on said target reference points.

38. (Original) The method of claim 36, wherein said input includes a command.

6

39. (Original) The method of claim 38, wherein said command allows for at least one of shifting said geometrical object along a dimensional axis, rotating said geometrical object, and adjusting a magnification of said geometrical object.

40. (Original) The method of claim 38, wherein said command allows for coarse adjustments and fine adjustments of said geometrical object.

41. (Original) The method of claim 36, further comprising calculating a plurality of accuracy metrics.

42. (Original) The method of claim 36, further comprising displaying said geometrical object as one of a solid object, a semi-transparent object, and a transparent object.

43. (Original) The method of claim 36, further comprising displaying a thumbnail image of an area proximate to at least one of said template reference points.

44. (Original) The method of claim 43, wherein said thumbnail image is configured to allow for a substantially simultaneous display of fine positioning detail and coarse positioning detail.

45. (Original) The method of claim 36, further comprising providing an accuracy measurement detail for at least one of said template reference points or for a composite of said template reference points.

46. (Previously presented) The method of claim 43, further comprising analyzing an alignment status of an image generation device, wherein said alignment status is determined from a discrepancy between said accuracy measurement detail and defined locations for said template reference points.

47. (Previously presented) The method of claim 36, further comprising adjusting said positioning of said geometrical object within said second image.

7

48.   (Currently amended) A method for aligning radiographic images, comprising:

facilitating a positioning of a template image comprising a first set of reference points in relation to an object image comprising a second set of reference points by relating at least one point in the first set of reference points to at least one point in the second set of points; and

generating an aligned image from a target image and said object image according to said positioning of said template image in relation to said object image.

49.   (Previously presented)   The method of claim 46, wherein said positioning is facilitated by providing controls for said positioning of said reference image in relation to said object image.

8